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ABSTRACT

Adults' responses to a survey of television viewing were investigated to examine the premise that respondents assume that the range of precoded response alternatives reflects the researcher's knowledge of the distribution of opinions or behaviors in the population. Responses are, therefore, a function of the response alternatives provided. Respondents assume that the average respondent is represented by the values in the middle range of the response alternatives, and that the values at the extremes of the scale also represent the extremes of the distribution. These assumptions may mediate the impact of response alternatives on respondents' reports in two ways. Respondents may either use the range of the response alternatives as a frame of reference in estimating their own behavioral frequencies, or they may be reluctant to report frequencies that appear extreme in the context of the scale. Three experiments were conducted to differentiate between the frame of reference and the social desirability hypotheses. Subjects included American undergraduate students and West German adults. The results of all studies favored the frame of reference hypothesis, i.e. that respondents use the range of the response alternatives as a frame of reference in estimating their own behavioral frequencies. (Author/MAC)

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How Respondents Use Response Alternatives to Estimate Behavioral Frequencies

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Abstract

Respondents assume that the range of precoded response alternatives reflects the researcher's knowledge of the distribution of opinions or behaviors in the population. They assume that the average respondent is represented by values in the middle range of the response alternatives, and that the values at the extremes of the scale also represent the extremes of the distribution. These assumptions may mediate the impact of response alternatives on respondents' reports in two ways: Respondents may either use the range of the response alternatives as a frame of reference in estimating their own behavioral frequencies, or they may be reluctant to report frequencies that appear extreme in the context of the scale. Three experiments were conducted to differentiate between the frame of reference and the social desirability hypothesis. The results of all studies favor the frame of reference hypothesis.

How Respondents Use Response Alternatives to Estimate Behavioral Frequencies

Respondents in social and psychological research are often asked to report the frequency with which they engage in a particular behavior. They usually do this by checking one of several precoded response alternatives provided to them by the researcher. Recent research (Schwarz, Hippler, Deutsch, & Strack, 1985; Schwarz & Hippler, 1987; Schwarz & Scheuring, 1986) has demonstrated that the responses are, in part, a function of the response alternatives provided.

For example, in one of our first studies, respondents were asked how many hours per day they watch television. They provided their report either in an open response format or along one of the two scales shown in Figure 1.

Figure 1

The response alternatives ranged either from "up to 1/2 hour" to "more than 2 1/2 hours" , or from "up to 2 1/2 hour" to "more than 4 1/2 hours." As expected, respondents reported a higher TV consumption when they were given the high rather than the low frequency scale. Specifically, 37.5% of the respondents who were given the high frequency scale, but only 16.2% of the respondents who received the low frequency scale, reported watching TV for more than 2 1/2 hours per day. Two different processes may contribute to this effect.

On the one hand, respondents are unlikely to have detailed episodic memories of behaviors as frequent and mundane as watching TV. Therefore, they have to use an estimation strategy to compute a reasonable answer. In doing so, they may use the

range of the response alternatives provided to them as a salient frame of reference to estimate their own TV consumption. For example, respondents who assume that their TV consumption is "average" may check a value in the middle range of the scale. In fact, previous results (Schwarz et al., 1985) indicated that respondents assume that the "typical" or "average" behavior is reflected in the middle range of the response alternatives, regardless of the specific values of these alternatives. Such an estimation strategy may be particularly likely to be used for mundane behaviors, such as watching TV, which may not be well represented in episodic memory.

On the other hand, respondents may be sensitive to self-presentational concerns when responding. They may be reluctant to check a response alternative that seems extreme in the context of the scale and thus reflects presumably unusual behavior. This has been suggested by Bradburn and Danis (1984), who found higher reports of alcohol consumption in an open than in a closed response format.

In the present paper, I will report three experiments that tested competing hypotheses derived from these process assumptions (in addition to exploring other issues, not elaborated here). In all experiments, respondents were asked to report their average daily or weekly TV consumption using different sets of response alternatives.

Experiment 1:
Self-Reports and Proxy-Reports

The first study explored the relative impact of the range of response alternatives on reports of one's own behavior, and on reports of the behavior of others, as they are assessed when proxy respondents are interviewed. In general, the two process assumptions lead to opposite predictions for self- and proxy-

reports.

If the impact of response alternatives is mediated by social desirability, the effect of scale range should be the more pronounced the more respondents are concerned with the desirability of their responses. Accordingly, scale effects should be **stronger** when respondents report their own behavior than when they report the behavior of friends or distant acquaintances. This follows from the assumption that they are presumably more concerned with their own self-presentation than with the image they present of others.

If respondents use the values presented in the scale to compute an estimate, on the other hand, the impact of scale range should be the more pronounced, the less other information is available that could be used to compute an answer. Therefore, the effect of scale range should be **smaller** when respondents report their own behavior than when they report the behavior of friends or distant acquaintances, because they can draw upon a broader base of competing episodic information for self-reports.

Method

142 University of Illinois undergraduates, randomly assigned to conditions, reported either their own weekly TV consumption, the weekly TV consumption of a close friend, or the weekly TV consumption of a "typical U of I undergraduate" in a self-administered questionnaire. The reports were either provided in an open response format or along one of the two scales shown in Figure 2.

Figure 2

Respondents' reports on these scales were coded to reflect an estimate of more or of less than 10 hours per week, and the proportion of respondents who reported a consumption of more than 10 hours per week is used as the dependent variable. These proportions are analyzed by a procedure suggested by Rosenthal

and Rosnow (1985) that allows the computation of planned comparisons according to the logic of analyses of variance.

Results

As predicted by the frame of reference hypothesis, the impact of scale range was most pronounced when respondents estimated the TV consumption of a "typical U of I undergraduate". Specifically, 71 % provided estimates of more than 10 hours per week on the high frequency response scale, but only 13 % did so on the low frequency scale, resulting in a difference of 58 percentage points, $z = 2.85$, $p < .003$. The impact of scale range was least pronounced, on the other hand, when respondents reported their own TV consumption, with a difference of 32 percentage points, $z = 1.48$, $p < .07$. This pattern of results is opposite to the one predicted by the social desirability hypothesis, which holds that self-reports should be most strongly affected. Reports about the behavior of close friends fell in between these extremes, as both hypotheses would predict, with a difference of 37 percentage points, $z = 1.91$, $p < .03$.

Figure 3

These findings suggest that respondents use the range of the response alternatives as a frame of reference in estimating behavioral frequencies, and that they are the more likely to rely on this frame the less other information they have. Accordingly, precoded response alternatives are particularly likely to bias behavioral reports when proxy respondents are used, and the size of the response effect is likely to increase the less the respondent has detailed episodic knowledge about the behavior of the target person.

In this regard, it is informative to note that most of the

respondents in the friends condition of the present study chose their room mate as the target person. It therefore comes as little surprise that their estimates of their friend's behavior were only slightly more susceptible to scaling effects than their self-reports.

Experiment 2:
The Impact of Private and Public Self-Consciousness

While the first study manipulated the availability of relevant information by assessing self-reports or reports of others' behavior, a second study, done in collaboration with Julia Bienias (Bienias & Schwarz, 1987), used an individual difference approach. Previous research in personality psychology indicated that individuals who focus attention on the self provide more accurate self-reports, presumably because relevant self-knowledge is cognitively more accessible to them (cf. Wicklund, 1982 for a review). This suggests that these individuals should be less influenced by the range of the response scale provided to them because they may have better access to relevant episodic knowledge.

Such a finding would parallel the results of Experiment 1, further supporting the hypothesis that the impact of scale range decreases as respondents' available knowledge about the behavior under investigation increases.

However, individuals not only differ in the extent to which they pay attention to their own behaviors and feelings, but also in the extent to which they pay attention to the impression they give to others. According to the social desirability hypothesis, individuals who care a lot about their public image should be

more affected by scale range than individuals who pay less attention to what others think of them.

Accordingly, we assessed both, individuals' disposition to pay attention to what others think of them and their disposition to focus on their own behaviors and feelings, using the well-established "public" and "private self-consciousness" scales developed by Fenigstein, Scheier, and Buss (1975).

Method

222 University of Illinois undergraduates reported their weekly TV consumption in an open answer format or along one of the two scales used in Study 1 (see Figure 2), as part of a larger self-administered questionnaire. In addition, their public and private self-consciousness scores (Fenigstein et al., 1975) were assessed, and respondents were grouped as high or low on public and private self-consciousness according to a median split.

Results and Discussion

Overall, a higher proportion of respondents reported watching TV for more than ten hours when given the high than when given the low frequency range scale, with responses given in an open format falling in between. This pattern replicates previous findings and is reflected in a significant contrast corresponding to the main effect of scale, $z = 3.67$, $p < .001$.

Public Self-Consciousness. Figure 4 shows a breakdown of respondents' reports according to their public self-consciousness scores, that is, their disposition to pay attention to the public impression they give to others.

Figure 4

This breakdown reveals that both, respondents high and low on public self-consciousness reported a higher TV consumption on the high than on the low scale. Moreover, the effect of scale is virtually identical for both levels of public self-consciousness, with a difference 27 percentage points under high, and 26 percentage points under low public self-consciousness. Accordingly, no significant interaction of public self-consciousness and scale range was obtained (z = 0.07, n.s.). Additional comparisons within each scale condition also failed to reveal any significant differences as a function of respondents' public self-consciousness scores (z's = 0.43, and 0.04, n.s., for the high and low range scale conditions, resp.). Thus it would appear that respondents' disposition to pay attention to the public image they give to others did not affect their response behavior, contrary to predictions derived from the social desirability hypothesis.

Private Self-Consciousness. Figure 5 shows an analogous breakdown according to respondents' private self-consciousness scores, that is, their disposition to focus attention on their own behaviors and feelings.

Figure 5

Separate analyses at each level of private self-consciousness reveal that the effect of scale range is only reliable for respondents who scored low on private self-consciousness, z = 3.94, p <. 001 . Specifically, 51 % of the respondents who were given the high range scale reported watching TV for more than 10 hours per week while only 13% of the

respondents given the low range scale did so, resulting in a difference of 38 percentage points, $z = 3.95$, $p < .001$. The proportion of respondents who reported watching more than 10 hours of TV weekly in an open response format fell in between these extremes.

In contrast, respondents who scored **high** on the private self-consciousness scale were not significantly affected by the range of the response scales provided to them ($z = 1.35$, $p = .18$), though the pattern of the proportions is similar to the one discussed above, with a difference of 14 percentage points. This differential impact of scale range is reflected in an interaction of scale range and private self-consciousness , $z = 1.69$, $p < .10$.

In summary, respondents who scored high on the disposition to focus attention on the self, as assessed by the private self-consciousness scale, were less influenced by the range of the response alternatives provided to them than respondents who scored low on this disposition. This finding presumably reflects the higher accessibility of self-related information under high self-consciousness, and suggests that these respondents used information recalled from memory , rather than information provided by the scales, to estimate their TV consumption. To this extent, the present results parallel the findings of Study 1 by indicating that the impact of the response alternatives decreases as the accessibility of other information increases.

In addition, the present data provide further support for the observation that behavioral reports are more valid under self-focused attention (see Wicklund, 1982 for a review) by demonstrating that respondents' with dispositionally self-focused attention are less susceptible to question form effects. The applied implications of this finding deserve further consideration, which is, however, beyond the scope of the present

paper.

Experiment 3:
Response Scale Effects Are Eliminated By Episodic Recall

If the impact of scale range on respondents' reports decreases with the cognitive accessibility of relevant behavioral episodes, as the previous results would suggest, scale range effects should be greatly reduced or eliminated if respondents are induced to recall relevant behavioral instances. If the scale communicates the norm, on the other hand, and respondents hesitate to deviate from the suggested norm in their public report, private recall of behavioral episodes should not affect the obtained public reports. The results of a study conducted in collaboration with Brigitte Chassein and Fritz Strack (Chassein, Strack, & Schwarz, 1987) bear on these hypotheses.

Method

125 German adults participated in a study that is only reported in parts in the present paper. Some respondents were given a TV magazine to browse through last week's TV program and were asked to recall which programs they had watched during that week, before they were asked to report their average weekly TV consumption in an open response format or along a high or low frequency response scale. Other respondents reported their weekly TV consumption without a chance to refresh their memory, replicating the standard procedures used in the previous studies.

Results and Discussion

The results of this study are shown in Figure 6. If respondents had to report their typical TV consumption without a

chance to refresh their memory, they reported a higher consumption on the high than on the low response scale, resulting in a difference of 44 percentage points, $z = 3.04$, $p < .01$. However, if respondents could refresh their memory about what they saw the week before, the impact of scale range on their reported typical TV consumption was cut by more than half and the resulting difference of 11 percentage points did not reach significance, $z = .97$, $p > .30$.

Figure 6

Conclusions

In combination, the present findings support the hypothesis that the impact of response scales on behavioral reports is mediated by their informative function. Respondents use the range of the response alternatives as a frame of reference in estimating their behavioral frequencies. Accordingly, the impact of response alternatives was the more pronounced the less relevant episodic information was easily available. Thus, response scale effects were more pronounced when respondents reported the behavior of others rather than their own behavior (Experiment 1). Moreover, recalling relevant behavioral episodes prior to estimating one's usual behavior greatly attenuated the impact of scale range (Experiment 3). Finally, the impact of scale range was moderated by individual differences in the degree of self-focused attention, and respondents with a high chronic accessibility of self-relevant information were not significantly affected by the response alternatives (Experiment 2).

None of the obtained findings could be derived from the hypothesis that the impact of scale range is mediated by considerations of social desirability and self-presentation, which would, in fact, predict opposite results for Experiment 1.

Moreover, individual differences in respondents' concern about their public image did not moderate the impact of response scales (Experiment 2). Thus, social desirability and self-presentation do not seem to play a major role in the present non-threatening context, that is typical for the majority of behavioral reports assessed in surveys, though more threatening questions may activate these concerns.

Turning to the applied implications of the present findings, it needs to be emphasized that the impact of response alternatives on respondents' behavioral reports increases as the accessibility of relevant episodic information decreases. Therefore, response scale effects on behavioral reports are particularly likely to be obtained if proxy respondents are used and if the behavior under study is frequent and mundane, thus decreasing the accessibility of distinct episodes in memory.

References

Bienias, J.L., & Schwarz, N. (1987, August). Effects of self-consciousness and question form on behavioral reports. Paper prepared for the meetings of the American Psychological Association, New York, NY.

Bradburn, N. & Danis, C. (1984). Potential contributions of cognitive research to survey questionnaire design. In T.B. Jabine, M.L. Straf, J.M. Tanur, & R. Tourangeau (eds.), Cognitive Aspects of Aspects of Survey Methodology. Washington: National Academy.

Chassein, B., Strack, F., & Schwarz, N. (1987, April). Erinnerungsstrategie und Häufigkeitsskala: Zum unterschiedlichen Einfluss von relationaler versus episodischer Erinnerung auf Häufigkeitsurteile. 29th Tagung Experimentell Arbeitender Psychologen, Aachen, FRG, April 1987.

Fenigstein, A., Scheier, M.F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. Journal of Consulting and Clinical Psychology, 43, 522-527.

Schwarz, N. & Hippler, H.J. (1987). What response scales may tell your respondents. In H.J. Hippler, N. Schwarz, and S. Sudman (eds), Social Information Processing and Survey Methodology. New York: Springer Verlag, in press.

Schwarz, N., Hippler, H.J., Deutsch, B. & Strack, F. (1985). Response scales:Effects of category range on reported behavior and subsequent judgments. Public Opinion Quarterly, 49, 388 - 395.

Wicklund, R.A. (1982). Self-focused attention and the validity of self-reports. In M.P. Zanna, E.T. Higgins, & C.P. Herman (eds.),Consistency in Social Behavior. Hillsdale: Erlbaum.

Figure 1

Response Alternatives for Daily TV Consumption

Low Frequency Scale	High Frequency Scale
( ) up to 1/2 hour	( ) up to 2 1/2 hours
( ) 1/2 to 1 hour	( ) 2 1/2 to 3 hours
( ) 1 to 1 1/2 hours	( ) 3 to 3 1/2 hours
( ) 1 1/2 to 2 hours	( ) 3 1/2 to 4 hours
( ) 2 to 2 1/2 hours	( ) 4 to 4 1/2 hours
( ) more than 2 1/2 hours	( ) more than 4 1/2 hours

Figure 2
Response Alternatives for Weekly TV Consumption

Low Frequency Scale	High Frequency Scale
( ) up to 2 1/2 hours	( ) up to 10 hours
( ) 2 1/2 to 5 hours	( ) 10 to 15 hours
( ) 5 to 7 1/2 hours	( ) 15 to 20 hours
( ) 7 1/2 to 10 hours	( ) 20 to 25 hours
( ) more than 10 hours	( ) more than 25 hours

Fig. 3

Self- and Proxy-Reports as a Function of Scale Type

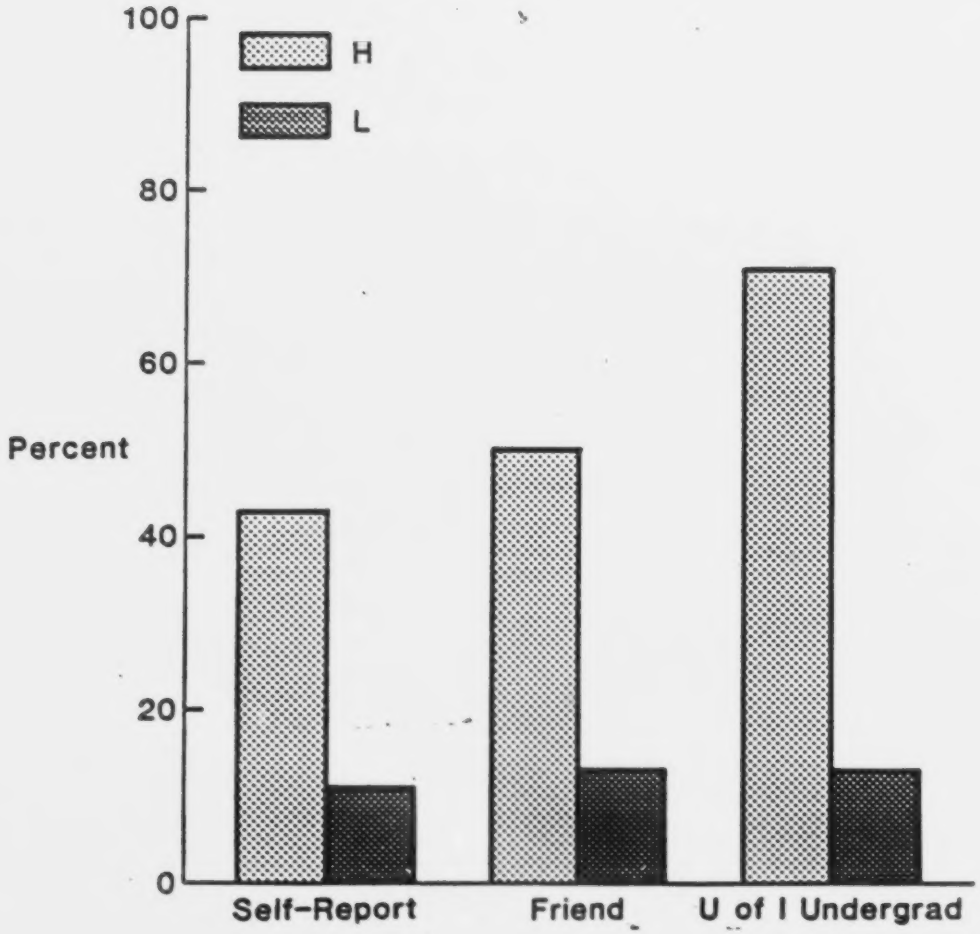

Fig. 4

Self-Reports as a Function of Scale Type and Public Self-Consciousness

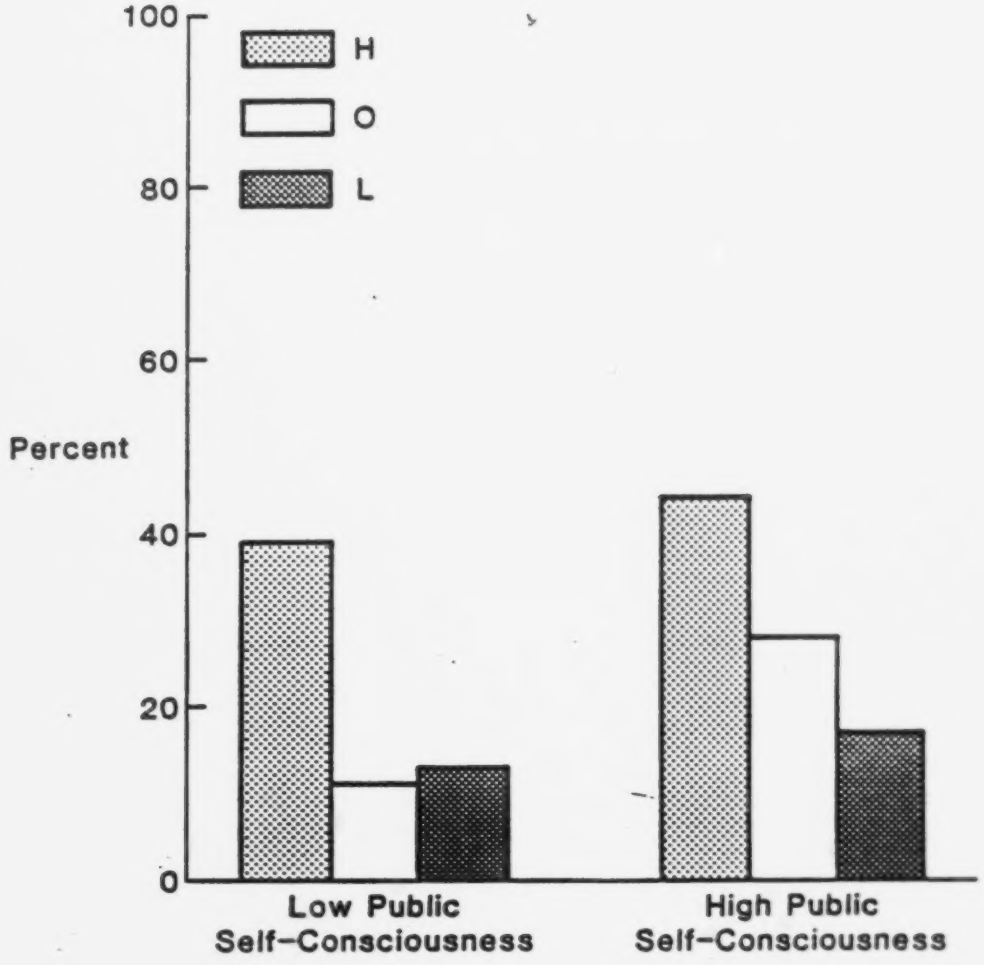

Fig. 5

Self-Reports as a Function of Scale Type
and Private Self-Consciousness

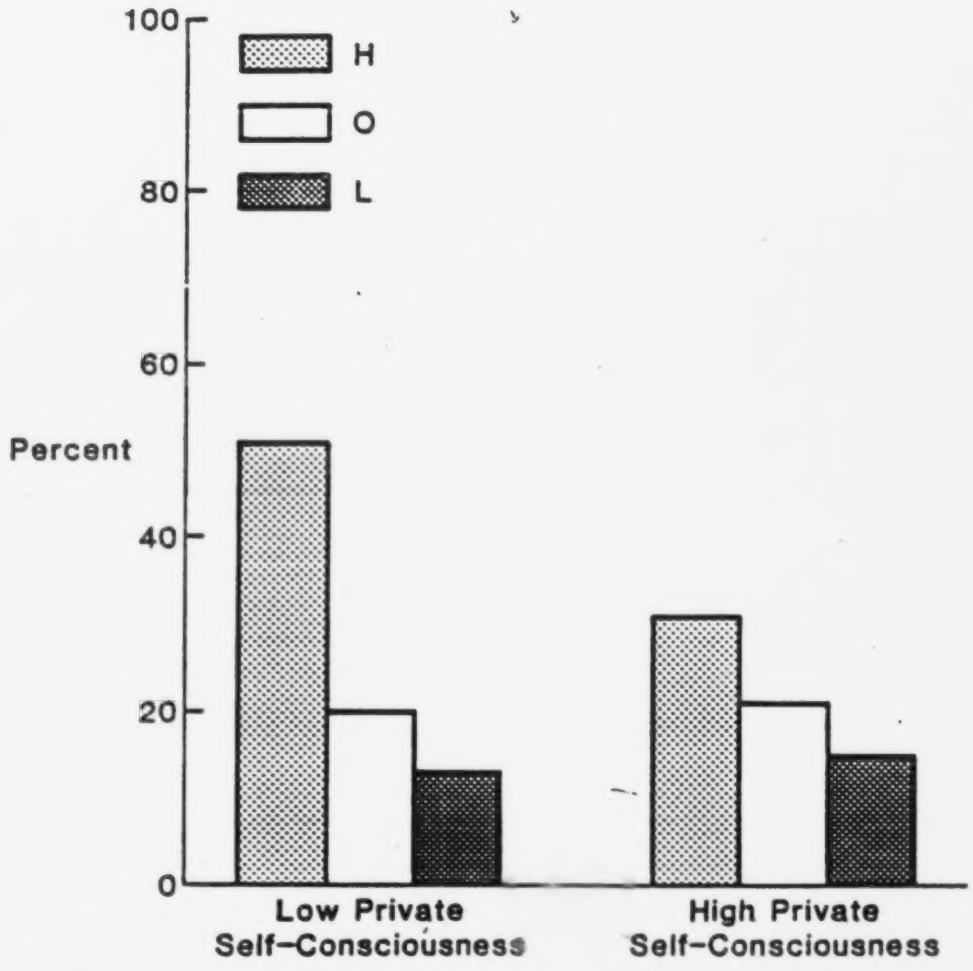

Fig. 6.

Self-Reports as a Function
of Episodic Recall